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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/966,440  | 09/27/2001  | Akira Yamaguchi      | 2102475-991160      | 5355             |
| 26379   | 7590        | 12/31/2003           | EXAMINER            |                  |
| GRAY CARY WARE & FREIDENRICH LLP<br>2000 UNIVERSITY AVENUE<br>E. PALO ALTO, CA 94303-2248 |             |                      | MANDALA, VICTOR A   |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2826                |                  |

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/966,440             | YAMAGUCHI ET AL.    |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Victor A Mandala Jr.   | 2826                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 19-26 and 28-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-26 and 28-49 is/are allowed.
- 6) ☒ Claim(s) 50 and 51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 50 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 6,078,100 Duesman et al.

1. Referring to claim 50, a semiconductor device comprising: a semiconductor substrate, (Figure 4a examiner's label #4); a first wiring layer having a first thickness, (Figure 4a examiner's label #2), extending in a direction parallel to a surface of the semiconductor substrate, (Figure 4a examiner's label #4), and provided above the semiconductor substrate, (Figure 4a examiner's label #4); a second wiring layer having a second thickness, (Figure 4a examiner's label #1), greater than the first thickness, (Figure 4a examiner's label #2), extending in the direction, (the vias radius extends in a direction parallel to the substrate surface), and provided between the semiconductor substrate, (Figure 4a examiner's label #4), and the first wiring layer, (Figure 4a examiner's label #2); and a third wiring layer having a third thickness, (Figure 4a examiner's label #3), greater than the first thickness, (Figure 4a examiner's label #2), extending in the direction, (the vias radius extends in a direction parallel to the substrate surface), and provided above the first wiring layer, (Figure 4a examiner's label #2).
2. Referring to claim 51, a semiconductor device comprising: a semiconductor substrate, (Figure 4a examiner's label #4); a first wiring layer having a first thickness, (Figure 4a

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examiner's label #3), extending, (the vias radius extends in a direction parallel to the substrate surface), in a direction parallel to a surface of the semiconductor substrate, (Figure 4a examiner's label #4), and provided above the semiconductor substrate, (Figure 4a examiner's label #4); a second wiring layer having a second thickness, (Figure 4a examiner's label #2), smaller than the first thickness, (Figure 4a examiner's label #3), extending the direction, and provided between the semiconductor substrate, (Figure 4a examiner's label #4), and the first wiring layer, (Figure 4a examiner's label #3); and a third wiring layer, (Figure 4a examiner's label #5), having a third thickness smaller than the first thickness, (Figure 4a examiner's label #3), extending in the direction, and provided above the first wiring layer, (Figure 4a examiner's label #3).

*Allowable Subject Matter*

3. Claims 19-26 & 28-49 are allowed.

*Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor A Mandala Jr. whose telephone number is (703) 308-6560. The examiner can normally be reached on Monday through Thursday from 8am till 6pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

VAMJ  
12/18/03

RECEIVED  
VICTOR A. MANDALA JR.  
DECEMBER 18 2003

